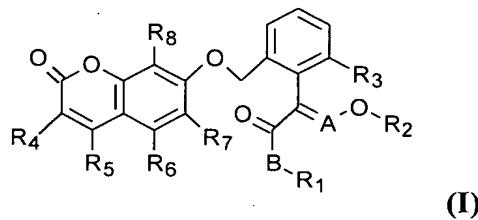


What is claimed:

1. A benzopyrone compounds, its features includes general formula (I):



(I)

wherein:

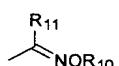
A is selected from CH or N;

B is selected from O, S or NR<sub>9</sub>; R<sub>9</sub> is selected from H or C<sub>1</sub>-C<sub>12</sub>alkyl;

R<sub>1</sub> and R<sub>2</sub> are respectively selected from H, C<sub>1</sub>-C<sub>12</sub> alkyl or C<sub>1</sub>-C<sub>12</sub> haloalkyl;

R<sub>3</sub> is selected from H, C<sub>1</sub>-C<sub>12</sub> alkyl, C<sub>1</sub>-C<sub>12</sub> haloalkyl or C<sub>1</sub>-C<sub>12</sub> alkoxy;

R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> may be the same or different, selected from H, halo, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>12</sub> alkyl, C<sub>2</sub>-C<sub>12</sub> alkenyl, C<sub>2</sub>-C<sub>12</sub> alkynyl, C<sub>1</sub>-C<sub>12</sub> haloalkyl, C<sub>1</sub>-C<sub>12</sub> alkoxy, C<sub>1</sub>-C<sub>12</sub> alkylthio, C<sub>1</sub>-C<sub>12</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>12</sub> alkylcarbonyl, C<sub>1</sub>-C<sub>12</sub> alkoxyC<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub> alkoxy carbonyl, C<sub>1</sub>-C<sub>12</sub> alkyl, C<sub>1</sub>-C<sub>12</sub> haloalkoxyC<sub>1</sub>-C<sub>12</sub> alkyl, or amino C<sub>1</sub>-C<sub>12</sub>alkyl in which amino is substituted with 0-2 C<sub>1</sub>-C<sub>12</sub> alkyl, 0-3 substituted groups of aryl, aryloxy, arylC<sub>1</sub>-C<sub>12</sub> alkyl, arylC<sub>1</sub>-C<sub>12</sub> alkoxy, aryloxyC<sub>1</sub>-C<sub>12</sub> alkyl, arylC<sub>1</sub>-C<sub>12</sub> alkoxyC<sub>1</sub>-C<sub>12</sub> alkyl, heteroaryl, heteroarylC<sub>1</sub>-C<sub>12</sub> alkyl, or heteroarylC<sub>1</sub>-C<sub>12</sub> alkoxy, the 0-3 substituted groups may be selected from halo, NO<sub>2</sub>, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy or C<sub>1</sub>-C<sub>6</sub> alkoxyC<sub>1</sub>-C<sub>6</sub> alkyl, and the groups having general formula as follows:



wherein: R<sub>10</sub> and R<sub>11</sub> are selected from H, C<sub>1</sub>-C<sub>12</sub> alkyl, aryl or aryl C<sub>1</sub>-C<sub>12</sub> alkyl; when R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> are all H, B is not NR<sub>9</sub>, and its stereoisomer.

2. The benzopyrone compound according to the claim 1, characterized in that wherein general formula (I):

A is selected from CH or N;

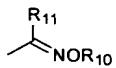
B is selected from O, S or NR<sub>9</sub>; R<sub>9</sub> is selected from H or C<sub>1</sub>-C<sub>6</sub> alkyl;

R<sub>1</sub> and R<sub>2</sub> are respectively selected from H, C<sub>1</sub>-C<sub>6</sub> alkyl or C<sub>1</sub>-C<sub>6</sub> haloalkyl;

R<sub>3</sub> is selected from H, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl or C<sub>1</sub>-C<sub>6</sub> alkoxy;

R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> may be the same or different, selected from H, halo, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>2</sub>-C<sub>6</sub> alkynyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkylthio, C<sub>1</sub>-C<sub>6</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>6</sub> alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub> alkoxyC<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy carbonyl, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> haloalkoxyC<sub>1</sub>-C<sub>6</sub> alkyl, or amino C<sub>1</sub>-C<sub>6</sub>alkyl in which amino is substituted with 0-2 C<sub>1</sub>-C<sub>12</sub> alkyl, 0-3 substituted groups of aryl, aryloxy, arylC<sub>1</sub>-C<sub>6</sub> alkyl, arylC<sub>1</sub>-C<sub>6</sub> alkoxy, aryloxyC<sub>1</sub>-C<sub>6</sub> alkyl, arylC<sub>1</sub>-C<sub>6</sub> alkoxyC<sub>1</sub>-C<sub>6</sub> alkyl, heteroaryl, heteroarylC<sub>1</sub>-C<sub>6</sub> alkyl, heteroarylC<sub>1</sub>-C<sub>6</sub> alkoxy, the 0-3 substituted groups may be selected from halo, NO<sub>2</sub>, C<sub>1</sub>-C<sub>2</sub>

alkyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl, C<sub>1</sub>-C<sub>2</sub> alkoxy or C<sub>1</sub>-C<sub>2</sub> alkoxyC<sub>1</sub>-C<sub>2</sub> alkyl, and groups having formula as follows:



wherein: R<sub>10</sub> and R<sub>11</sub> are respectively selected from H, C<sub>1</sub>-C<sub>6</sub> alkyl, aryl or arylC<sub>1</sub>-C<sub>6</sub> alkyl; when R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> are all H, B is not NR<sub>9</sub>.

3. The benzopyrone compound according to the claim 2, characterized in that wherein general formula (I):

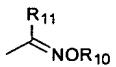
A is selected from CH or N;

B is selected from O or NH;

R<sub>1</sub> and R<sub>2</sub> are respectively selected from methyl;

R<sub>3</sub> is selected from H or methyl;

R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> may be the same or different, respectively selected from H, halo, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>2</sub>-C<sub>6</sub> alkenyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub> alkoxyC<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> alkoxycarbonyl, C<sub>1</sub>-C<sub>6</sub> alkoxy carbonylC<sub>1</sub>-C<sub>3</sub> alkyl, C<sub>1</sub>-C<sub>3</sub> haloalkoxyC<sub>1</sub>-C<sub>3</sub> alkyl, or amino C<sub>1</sub>-C<sub>3</sub> alkyl in which amino is substituted with 0-2 C<sub>1</sub>-C<sub>3</sub> alkyl, phenyl, phenoxy, phenyl C<sub>1</sub>-C<sub>2</sub> alkyl, phenylC<sub>1</sub>-C<sub>2</sub> alkoxy, phenoxy C<sub>1</sub>-C<sub>2</sub> alkyl, phenylmethyl, phenylmethoxyl, or phenylmethoxy C<sub>1</sub>-C<sub>2</sub> alkyl substituted with 0-2 halo, NO<sub>2</sub>, C<sub>1</sub>-C<sub>2</sub> alkyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl, C<sub>1</sub>-C<sub>2</sub> alkoxy or C<sub>1</sub>-C<sub>2</sub> alkoxyC<sub>1</sub>-C<sub>2</sub> alkyl, and the substituted group having general formula as follows:



wherein: R<sub>10</sub> and R<sub>11</sub> are respectively selected from H or C<sub>1</sub>-C<sub>6</sub> alkyl; when R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> are all H, B is not NH.

4. The benzopyrone compound according to the claim 3, characterized in that wherein general formula (I):

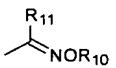
A is selected from CH or N;

B is selected from O or NH;

R<sub>1</sub> and R<sub>2</sub> are selected from methyl;

R<sub>3</sub> is selected from H or methyl;

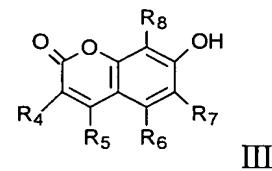
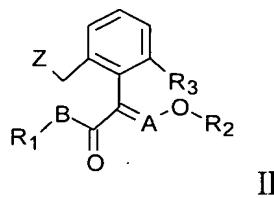
R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> may be the same or different, respectively selected from H, Cl, Br, F, CN, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub> alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub> alkoxy, C<sub>1</sub>-C<sub>6</sub> alkoxyC<sub>1</sub>-C<sub>3</sub> alkyl, C<sub>1</sub>-C<sub>3</sub> haloalkoxyC<sub>1</sub>-C<sub>3</sub> alkyl, amino C<sub>1</sub>-C<sub>3</sub> alkyl in which amino is substituted with 0-2 C<sub>1</sub>-C<sub>3</sub> alkyl, phenyl, phenoxy, phenylmethyl, phenylmethoxyl, substituted with 0-2 halo, NO<sub>2</sub>, C<sub>1</sub>-C<sub>2</sub> alkyl, C<sub>1</sub>-C<sub>2</sub> haloalkyl, C<sub>1</sub>-C<sub>2</sub> alkoxy or C<sub>1</sub>-C<sub>2</sub> alkoxyC<sub>1</sub>-C<sub>2</sub> alkyl, and the substituted groups having general formula as follows:



wherein: R<sub>10</sub> and R<sub>11</sub> are selected from methyl; when R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, R<sub>8</sub> are all H, B is not NH.

5. A preparation method of benzopyrone compounds, characterized in that:

The compound of general formula (I) is prepared by reaction of Benzylhalide having general formula (II) with 7-OH-benzopyrone compounds having general formula (III) at the present of base:



wherein:

Z is leaving group selected from Cl or Br;

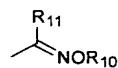
A is selected from CH or N;

B is selected from O, S or NR<sub>9</sub>; R<sub>9</sub> is selected from H or C<sub>1</sub>-C<sub>12</sub> alkyl;

R<sub>1</sub> and R<sub>2</sub> are respectively selected from H, C<sub>1</sub>-C<sub>12</sub> alkyl or C<sub>1</sub>-C<sub>12</sub> haloalkyl;

R<sub>3</sub> is selected from H, C<sub>1</sub>-C<sub>12</sub> alkyl, C<sub>1</sub>-C<sub>12</sub> haloalkyl or C<sub>1</sub>-C<sub>12</sub> alkoxy;

R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> may be the same or different, respectively selected from H, halo, CN, NO<sub>2</sub>, C<sub>1</sub>-C<sub>12</sub> alkyl, C<sub>2</sub>-C<sub>12</sub> alkenyl, C<sub>2</sub>-C<sub>12</sub> alkynyl, C<sub>1</sub>-C<sub>12</sub> haloalkyl, C<sub>1</sub>-C<sub>12</sub> alkoxy, C<sub>1</sub>-C<sub>12</sub> alkylthio, C<sub>1</sub>-C<sub>12</sub> alkylsulfonyl, C<sub>1</sub>-C<sub>12</sub> alkylcarbonyl, C<sub>1</sub>-C<sub>12</sub> alkoxyC<sub>1</sub>-C<sub>12</sub>alkyl, C<sub>1</sub>-C<sub>12</sub> alkoxy carbonyl, C<sub>1</sub>-C<sub>12</sub> alkoxy carbonylC<sub>1</sub>-C<sub>12</sub> alkyl, C<sub>1</sub>-C<sub>12</sub> haloalkoxyC<sub>1</sub>-C<sub>12</sub> alkyl, or amino C<sub>1</sub>-C<sub>12</sub>alkyl in which amino is substituted with 0-2 C<sub>1</sub>-C<sub>12</sub> alkyl; 0-3 substituted groups of aryl, aryloxy, arylC<sub>1</sub>-C<sub>12</sub> alkyl, arylC<sub>1</sub>-C<sub>12</sub> alkoxy, aryloxy C<sub>1</sub>-C<sub>12</sub> alkyl, arylC<sub>1</sub>-C<sub>12</sub> alkoxyC<sub>1</sub>-C<sub>12</sub> alkyl, heteroaryl, heteroarylC<sub>1</sub>-C<sub>12</sub> alkyl, or heteroaryl C<sub>1</sub>-C<sub>12</sub>alkoxyl, the 0-3 substituted groups may be selected from halo, NO<sub>2</sub>, C<sub>1</sub>-C<sub>6</sub> alkyl, C<sub>1</sub>-C<sub>6</sub> haloalkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy or C<sub>1</sub>-C<sub>6</sub> alkoxyC<sub>1</sub>-C<sub>6</sub> alkyl, and the groups having general formula as follows:



wherein: R<sub>10</sub> and R<sub>11</sub> are selected from H, C<sub>1</sub>-C<sub>12</sub> alkyl, aryl or aryl C<sub>1</sub>-C<sub>12</sub> alkyl; when R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub>, R<sub>6</sub>, R<sub>7</sub>, and R<sub>8</sub> are all H, B is not NR<sub>9</sub>.

6, According to the claim 1, application of the benzopyrone compounds for controlling insects in plants.

7, According to the claim 1, application of the benzopyrone compounds for controlling fungi in plants.

8, A composition of fungicides and insecticides comprises the compound of the claim 1 as an active ingredient, wherein the weight percentage of the active ingredient in the composition is from 0.1% to 99%.